

REMARKS

Claims 24-33, 35, 38-44, and 46 are pending and rejected in this application. Claims 24 and 46 are amended hereby.

Responsive to the rejection of claims 24-33, 38, 39, 41-44, and 46 under 35 USC § 103(a) as being unpatentable over US Patent No. 4,230,743 (Nakamura et al.) in view of US Patent No. 5,206,057 (Finnicum et al.), Applicants have amended claims 24 and 46 and submit that claims 24-33, 38, 39, 41-44, and 46 are now in condition for allowance.

Nakamura et al. disclose a process for producing pressure sensitive copying paper (Figs. 3 and 4) using a coating solution 1 containing microcapsules as a main component. A wind shielding plate 11 is placed upstream of the contact area so that the free fall of the material reaches web 9 without being disturbed (column 4, lines 8-55). The coating apparatus shown in Fig. 4 has a first coating apparatus and a second coating apparatus positioned subsequent to the first coating apparatus in the direction of flow of web 9. Web 9 goes through a first curtain and a second curtain flow as it proceeds in the direction of the arrow shown on web 9 of Fig. 4. The second coating layer is formed on the first coating layer while the first coating layer is in an undried state (column 7, lines 1-50).

Finnicum et al. show a device for applying a curtain coating for photographic film in which a multi-layer material passes through slots 14 and is dropped onto a web by gravity. The curtain 17 is bounded by sidewalls 19, 20 and a lateral wall 21. A valve mechanism permits a fluid to pressurize the space between the curtain 17 and the perimeter walls via a conduit 22 and valve 23 in order to control where on the arc of the web the curtain 17 impinges. There is a space between the web and the walls (column 3, lines 20-52).

In contrast, claims 24 and 46 as amended, each recite in part:

positioning a first guideblade immediately adjacent to said first discharge nozzle;

positioning a second guideblade immediately adjacent to said second discharge nozzle;

setting a doctor element against a surface of the paper web, said doctor element intercepting said first curtain, said doctor element leading said first curtain to the paper web;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed, nor suggested by Nakamura et al., Finnicum et al., or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Nakamura et al., disclose a process for producing pressure sensitive copying paper including a coating solution that contains microcapsules of the main component. Finnicum et al., discloses a device for applying a curtain coating for photographic film in which a multilayer material passes through slots and is dropped onto a web by gravity. Neither of the references teach the closing of a space, as previously argued. Further, neither of the references teach the positioning of guideblades and the positioning of a doctor element to intercept one of the curtains prior to the application media contacting the paper web. The application medium curtains after leaving the nozzle travel on the guideblades before taking a substantial vertical course toward the paper web. The doctor blade intercepts and guides the curtain of the first coater to the paper web. Therefore, Nakamura et al., Finnicum et al., and any of the other cited references, alone or in combination fail to disclosed, teach, or suggest the steps of positioning a first guide blade immediately adjacent to the first discharge nozzle; positioning a second guideblade immediately adjacent to the second discharge nozzle; and setting a doctor element against the surface of the paper web, the doctor element intercepting the first curtain, the doctor element leading the first curtain to the paper web, as recited in claims 24 and 46.

Applicants' invention has distinct advantages in that the elements of the enclosing space provide for a pressure that can be utilized to affect the coating characteristics. Further, the guideblades prevent the so called "teapot effect" and "shoots out" over breakaway edges of the guideblades. Further, the doctor element not only weakens or eliminates an air boundary layer carried by the paper web but also stabilizes the application medium as it heads towards the surface of the paper web. For all of the foregoing reasons, Applicants submit that claim 24, and claims 25-33, 38, 39, and 41-44 depending therefrom, and claim 46, are now in condition for allowance which is hereby respectfully requested.

Claim 35 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. in view of Finnicum et al. and in further view of U.S. Patent No. 5,192,592 (Shay). However, claim 35 depends from claim 24 and claim 24 is now in condition for allowance for the reasons given above. Accordingly, Applicants submit that claim 35 is now in condition for allowance, which is hereby respectfully requested.

Claim 40 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. in view of Finnicum et al. and in further view of U.S. Patent No. 5,136,970 (Saito et al.). However, claim 40 depends from claim 24, and claim 24 is now in condition for allowance for the reasons given above. Accordingly, Applications submit that claim 40 is now in condition for allowance, which is hereby respectfully requested.

For the foregoing reasons, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorizes that any charges be made to Deposit Account No. 20-0095,  
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Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

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